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Conference Abstract

TaiCOL Scientific Names Management Tool: Rebuilding the National Checklist in Taiwan Based on References

Sz-Yi Tsai[‡,§], Yi-Hsuan Li[§], Jin-Ying Lee[‡,§], Kuo-Fang Chung[‡,§]

‡ Taiwan Biodiversity Information Facility, Taipei City, Taiwan
§ Biodiversity Research Center, Academia Sinica, Taipei City, Taiwan

Corresponding author: Kuo-Fang Chung (bochung@gate.sinica.edu.tw)

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Abstract

Many checklist databases encounter common challenges. While they may fulfill the requirements of scientific name collection and species inquiries successfully, they often fall short in recording and presenting diverse opinions on scientific name usage over time and among different scholars. Moreover, due to the rapidity of classification changes and limited workforce for database maintenance, these checklists usually cannot be updated promptly. Last but not least, exchanging checklists poses a complex challenge such as name matching for synonym, homonym, orthographic variations and misapplied names. Therefore, an ideal database design should maintain neutrality and objectivity by recording comprehensive taxonomic history information of scientific names. The database can then present multiple views on scientific name usage after integrating data, allowing users to judge and interpret for themselves.

“Catalogue of Life in Taiwan” (TaiCOL*[1]) is the national database established in 2003 aiming to provide the most updated species checklist of Taiwan. However, it faces the challenges aforementioned. To design the database model, we conducted a method study to investigate how taxonomy works. Our findings identified key concepts (e.g., scientific name, name usage, similarities or differences in name usage, and namespace) for building the database structure to connect and interpret nomenclatural and taxonomic information.

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Furthermore, to effectively manage the vast amount of complex taxonomic history, we aim to develop a tool as the core for TaiCOL data management, enabling taxonomy researchers to assist in enriching the content of the database while completing scientific names management and research work. Additionally, we surveyed the nomenclature codes (Ride 1999, Turland 2018) and interviewed taxonomists in zoological and botanical fields to understand their working methods, processes, and writing conventions. This ensured that our tool aligns with the taxonomy research workflow and meets the needs of various biological disciplines.

“Scientific Names Management Tool”*[2] is now available for use and undergoing continuous optimization. It is not limited to use in Taiwan, but only scientific names labeled as "existing in Taiwan" will be integrated into the TaiCOL portal. For public use, the taxa are generated or updated for the TaiCOL portal through logical processing based on the latest classification results from the tool. Although the TaiCOL portal currently presents only one taxonomic view, the different usages of scientific names and various species information can be traced by giving the references. As for checklist exchange, in case of discrepancies or conflicts, alternative usages will be provided during name matching. In the future, users can have the option to choose references to obtain different taxonomic views of checklists.

Keywords

taxonomic backbone, biodiversity informatics, community collaboration

Presenting author

Sz-Yi Tsai

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Conflicts of interest

The authors have declared that no competing interests exist.

References

- Ride WDL, et al. (Ed.) (1999) International Code of Zoological Nomenclature. 4th ed. International Trust for Zoological Nomenclature, London. https://doi.org/10.5962/bhl.title.50608
- Turland NJ, et al. (Ed.) (2018) International Code of Nomenclature for algae, fungi, and plants (Shenzhen Code) adopted by the Nineteenth International Botanical Congress Shenzhen, China, July 2017. Koeltz Botanical Books, Glashütten. https://doi.org/10.12705/Code.2018

Endnotes

*1 https://taicol.tw/

*2 https://nametool.taicol.tw/